137 *sitifolia, S. aizoides, S. aizoon, Erysimum Witmanni, Phyteuma orbiculare, Silene Zawadskii, Onobrychis montana var. transilvanica, Cerastium alpinum, C. lanatum, Oxytropus campestris, Alsine gerardi, Campanula alpina, C. carpatica, Alyssum repens* (endemic), *Rhinanthus alpinus, Rhodiola rosea, Sedum atratum.* In the cracks in the rocks where moisture collected were noted *Pinguicula alpina, P. vulgaris, Saxifraga aizoides, S. androsacea, Viola biflora, Arabis alpina, Achillea Schurii, Biscutella laevigata,* and *Androsace lactea.*

It was obvious that to make a detailed study of this interesting mountain with its forest, plateau, gullies, scree slopes, etc., and other varying ecological factors, a much longer time would have been necessary than was possible under the conditions of our visit to the country.

THE WALK BY WAY OF BILBOR, PALTINIŞ, VATRA DORNEI, ETC., AND DOWN THE BISTRITA RIVER BY TIMBER RAFT TO BROŞTENI (BROSCENI).

133 THIS interesting excursion was made by a number of the party, and afforded a very good opportunity of seeing the country as some fifty miles were covered on foot in two days. We passed over fine slopes and through delightful valleys with their meadows bedecked with many species of flowering plants. There was time during such a walk only to notice the most salient features of the vegetation. We, however, saw hillsides where sheep were grazed quite to the top, also a mountain dairy where they were being milked. The temporary shelters for those cropping the hay in the valleys at some distance from their usual habitations were interesting, and the whole family appeared to sleep there and cook their meals till the area had been cleared.

DURING our stay at Vatra Dornei, through the kindness of the mayor and the prefect of the district, we were taken by car over a mountain pass down to Campulung and from thence to the wonderful walled monastery of Moldoviţa (Moldawitza) with fine sixteenth-century frescoes covering its walls. The chief point of interest from a vegetation point of view was the fine spruce forests which we saw and in which felling was in progress, the logs being pushed down the mountain side to timber carts at the bottom. The next day we had evidence of the importance of the lumbering industry

313 as we proceeded down the Bistrița river on a raft of spruce logs to Broșteni. In this way thousands of logs are transported by the current to saw mills lower down the stream. Lumbering was seen *en route* as we passed between slopes covered with fine spruce forests with here and there beech woods and also areas covered with birch.

LEAVING the raft at Broșteni we proceeded to Borsec by car and on the way saw an interesting effect of indiscriminate deforestation. On the slopes far too many trees had been cut down and a huge gully had been formed by a landslide ; a

Gullies and detrital fans resulting from deforestation in Bistrita valley.

house had been completely swept away and near by the soil was level with the top of the fencing round another house (see illustration above).

137 [133] BUDACUL (5,800 feet) was another mountain visited by members of the Vegetation Group. Spruce forest covered the slopes to a height of about 5,000 feet and there were no rocks. The last 500 feet were covered with mosses as well as *Festuca sp.* and the usual three *Vaccinia* with dwarf juniper (*Juniperus nana*). *Veratrum album* and *Hieracium* were the dominant plants in association with those mentioned on the summit, and in the woods below the following occurred : *Chrysanthemum rotundifolium, Scleranthus uncinatus, Scorzonera rosea, Ajuga genevensis, Meum*

137 *mutellina*, etc. The forester mentioned that beech forest was of no practical value but that hornbeam (*Carpinus betulus*) was sought after because of its hardness.

THE VEGETATION AROUND CORBU.

OF the vegetation around Corbu, the special village studied, little need be said: the hillsides had in many places been denuded of timber for building and domestic purposes throughout the whole length of the village.
THE following zones may be distinguished:

241 1. THE ZONE OF THE VALLEY BOTTOM (BISTRICIOARA).

THIS was devoted to agriculture, but the maize was poor in comparison with that seen on the hot Wallachian plains; patches of barley occurred chiefly on the south-facing slopes, and there were small patches of potatoes and hemp; hay was cut on the meadows near the river and on the lower slopes.

2. THE ZONE OF FOREST.

137 SPRUCE was the dominant tree, but on the church side of the
313 village, particularly towards the Borsec end, stretches of Scots pine (*Pinus sylvestris*) had evidently been planted just above the valley floor. This was presumably to retain detritus and to consolidate the soil as they were planted much too closely to have any economic value for timber. Conversation with the forester on Runcul above Tulgheș confirmed this fact and Dr. Pop, the botanist at Cluj, also mentioned that *Larix decidua* var. *polonica* had been planted above Corbu. The schoolmaster said that the valley floor and lower slopes had originally been covered with trees and that wood was very cheap but labour was dear. Timber plays a very great part in the domestic economy of a village like Corbu, being used for building, furniture, carts, looms, winding frames, etc., as well as for fuel.

THE TRAIN JOURNEY FROM TOPLITA (OLAH TOPLICZA) TO CLUJ.

241 FINALLY the train journey from Toplița to Cluj afforded
137 another opportunity for observing the crops grown. All along the railway in the Mureș valley much maize was

231 considerable admixture of cross-bred Swiss. On the Wallachian plains we find a cross between the Moldavian cattle of the plains and the Hungarian type which gives good milk, is easily fattened for market, and makes a good draught animal. Throughout the Danube plains the powerful water buffalo is important for draught purposes and for milk, and may be seen frequently also in the Transylvanian plains.

FOREST.

137 RICH in ploughland and not ill-provided with pasture, Roumania is fortunate in a third type of land utilisation which brings her vast acreage of mountainous upland into service. Forest covers about one-quarter of the land surface. Its greatest development occurs on the sandstones of the Flysch formation. Coniferous trees clothe the higher slopes above 1,400 metres, particularly on the Moldavian and Bucovinan frontiers of Transylvania. Below the coniferous forest zone with its peaty, acid soils, stretches the zone of beech forest, mixed, on its lower edge, with oak. (It is the beech forest that has given its name to Bucovina.) Here the characteristic soil is the leached, ashen-grey podsol, yielding poor crops in the clearings unless heavily manured. This zone tongues up the valleys into the coniferous zone. It widens to 100 kilometres in the Siret and Olt basins, but narrows in Muntenia, where the high mountains drop abruptly to the agricultural plains. The beech, unfortunately, has little economic value, and to this, with its poor soil, may be attributed the survival of so large a part of the beech forest. Its chief use is for firewood.

THE OAK FOREST on the lower slopes and foot hills, with its relatively rich brown soils, has naturally suffered most at the hands of settlers, and survives to-day mainly on the ridge combs and hill-tops. There are several species of oak, and hornbeam, lime and elm appear here and there in the oak forest with beech and birch on the upper margin of distribution. In Transylvania the lower hill country has been practically cleared of forest.

313 TIMBER is one of the mainstays of life of the peasant. All the constructional work of his village—dwelling house, barns,

313 church, fencing, roofing, flooring, is of timber, and also many of his household utensils: water-buckets, jugs, spoons, etc.

IT IS very unfortunate that the most lucrative type of timber should be the most inaccessible. Timber from the great stands of pine has to take the slow and tortuous route down the rivers in rafts (see Plates VII and VIII) to the Danube and Black Sea. Afforestation has not reached a high stage of development as yet. The trees are propagated by naturally-sown seeds, and there are very few nurseries. Where the clearings are made, the stumps are left in the ground to add to the difficulties of the hay harvester.

221 WE MAY sum up the tale of Roumania's agricultural assets by saying that she is well endowed by nature as regards soils and climatic conditions for the wide-spread production of grain, fruit and vegetables; that natural pasture, whether upland or lowland, is seasonal and insufficient for a satisfactory development of cattle raising, though much may be done by an intensified cultivation of fodder crops. The increased provision of communal grazing for the peasants has been a useful step. Conditions are better for sheep, which are more adaptable than cattle and are better able to stand the rigours of the hard winter. Transhumance is everywhere practised with these animals: those of the great plains moving from the Danube lowlands in the spring to the hill pastures in the summer. Local transhumance of cattle, sheep and pigs from villages of the upland valleys to the high dairies is the rule.

LAND TENURE.

241 123 AGRICULTURAL CONDITIONS, past and present, and the marketing of the products of land-utilisation are so closely bound up with conditions of land tenure that it is relevant to include here a short summary of those conditions.

IN THE PERIOD immediately preceding the outbreak of the Great War, 50 per cent of the land of Old Roumania was in large holdings (over 250 acres), and in the Bucovina, where the Roumanian peasants' holdings were pitiably small, 60 per cent. About 40 per cent of the holdings were of less than twenty-five acres. In Old Roumania and Transylvania the average was only eight acres per family, in the grain lands of Bessarabia eleven, but in the Bucovina uplands

135 rich in salts. More accessible than these deposits are those of the sub-Carpathian hill country where upper Tertiary rocks are intensely folded in with salt-bearing Flysch deposits and have become impregnated with oil from the salt formations of the Flysch that has been forced up along lines of folding and fracture. Exploitation is mainly confined to the oil of these Pliocene rocks.

315 THE MAJOR oil-field follows the Carpathian arc from the neighbourhood of Piteşti through Targoviste, Ploeşti in Muntenia and northward through Bacau in Moldavia to the Polish frontier (i.e. within the districts of Dambovița, Prahova, Buzau and Bacau in the Trotuş valley). There is also a small field in the Maramureş district.

THE Prahova district is the most important, producing 65 to 70 per cent of the whole, while Dambovița produces about 25 per cent. Pre-war development of oil industry was mainly in the hands of foreigners. By the 1929 Mining Law equality of Roumanian and foreign capital is provided. By an Act of 1924 the subsoil became the property of the State, which grants new leases for a period of thirty years. The State has acquired oil plot zones as permanent reserves. Oil getting is proceeding on up-to-date lines. Deeper strata are being tapped as the upper one becomes exhausted. Modern wells now reach down to about 1,800 metres. In Prahova and Dambovița State concessions are the most productive and active (e.g. Moveni and Gura-Ocnitsei). The total output of crude oil in 1933 was 7.37 million metric tons, 19.7 of the total oil products being used for home consumption.

NATURAL GAS is also tapped in the oil-fields for gasolene and for domestic lighting and heating. It is largely used in the chemical industry. Transylvania has no oil of importance, but some useful gas-fields. Crude oil is used for steam raising in the metallurgical industry and for generating electricity: it also figures as fuel in the tile and pottery industry. Oil- and petrol-driven machinery is installed in electric factories, in pottery and tile works, and particularly in the alimentary industries.

313 TIMBER, owing to the lack of good communications and to the abundance and lavish use of the forests, remains an important item in the production of power, particularly in

313 the small industries of the remoter upland districts. It is particularly important in the wood and pulp and paper industries, and in the small textile and pottery works. Charcoal is still used for smelting.

377 ELECTRICITY is mainly generated thermally, in spite of the great potentialities of water-power provided by the rivers from the Carpathians, not to mention the Danube current. Lack of natural reservoirs in snow-field, glacier and lake means that exploitation of the hydro-electric resources would entail enormous capital expenditure in the construction of reservoirs. The sum total of direct water-power used must, however, be very great, for the number of water-wheels is legion.

17 SALT is another asset of real importance. Like the mineral oil, it is found in greatest abundance, and is most accessible, in the upper Tertiary deposits of the sub-Carpathians, in the region of greatest disturbance. Sometimes it is exposed in cliffs, sometimes it is covered with thin layers of loam. Salt mines are being worked at Slanic, at Targu-Ocna (Tergu Ocnei) in the Trotuş basin, and at Ocnele-Mare (Ocna) on 316 the Olt. In 1932 the amount extracted was 288,000 metric tons, of which 240,500 tons were for home consumption, the rest being exported to the Balkan countries and to Russia. Salt mining and marketing are state monopolies.

IN iron ore Roumania is not rich, the output being only about 90,000 tons per annum. The most important deposits lie in the mountains of the Banat and in the Poiana Ruscai (Ruszka) massif farther north, between the Mureş and the Bistra (Bisztra) tributary of the Timiş (Temes). The Reciţa (Reciţa Montana) district in the Banat mountains, opening towards Hungary, has foundries and steel works employing about 15,000 hands.

WITH the recent rise in the price of gold, the mining of that metal, which formerly was almost negligible, has become more active, and the output reached nearly 4,000 kgs. in 1933. The ore is mined in the Trachyte massif of the Bihor.

433 IN SPITE of considerable advantages in natural resources, and solicitous nursing on the part of the State, particularly in the Old Kingdom, industry in Roumania is still in its

by imported boots and shoes, whilst socks and stockings bought at the local fairs are beginning to be preferred to the traditional method of bandaging the feet (see Appendix V).

WOOD.

THE most characteristic of the other local occupations are concerned with wood. Each peasant is allowed a certain amount of timber annually, the cutting of which is arranged by the Forestry Co-operative Society, but for every tree felled a new one has to be planted. Among the men of the village the making of wooden spoons, jugs and plates, often elaborately carved, is a favourite pursuit, though it is being threatened by cheap imported metal goods, so that in this, as in other ways, a rapid transition from medieval to modern conditions seems likely to occur in the near future.

THE GREEK CATHOLIC PRIEST.

ALTHOUGH primarily concerned with the spiritual welfare of his flock, the Greek Catholic (Uniate) priest in Corbu, as elsewhere in Roumania, is intimately bound up with the economic life of the community. Following the rule of the Eastern and Uniate Churches for their secular clergy with a cure of souls, the priest is married and depends to a considerable extent upon his land for his maintenance. He is often trusted with public and private business on behalf of the commune and its members. To him the peasants may bring their maize to be ground, their sunflower seeds to be crushed, their timber to be sawn and their cloth to be scoured. The water of the Bistricioara that runs past the priest's house is harnessed to provide power at Corbu for these operations, and from the services he thus renders to the villagers the priest gets part of his income.

IV. THE FUTURE

IT IS CLEAR from the foregoing account that Corbu is a mountain community that is rapidly approaching a crisis in its history. The old economic self-sufficiency is being undermined by the insidious influence of the journeyman, and the cheapness of the new wares that he is introducing will tend to increase the amount of leisure that the peasant already enjoys by releasing labour that he has hitherto expended on

5: Fleure S-5 (no date) i-39 EDI Rumania EDI

FARMING AROUND CURTEA DE ARGEŞ

AMY R. BURGESS

133 IN THE region of Curtea de Argeş the river flows in a valley of varying width, floored with fine sandy alluvium and bounded by somewhat rounded hills. Some traces of river terraces are discernible.

THE LAND of this region can be divided into four categories: (*a*) arable, (*b*) hay meadows, (*c*) forest, (*d*) high mountain pasture. The arable land is principally on the first terrace, but stretches both down the slope to the valley bottom and up the slope to the second terrace. The hay meadows are above the arable land, spreading upwards towards the [137] forest. The forests comprise 75 per cent of the total area, and consist mainly of timber trees, such as beech and pine, together with a considerable number of walnut trees. The high pastures are above the forest belt and may be as much as fifty kilometres away from the village centre of the commune to which they belong.

423 THE ARABLE land is owned by the peasants, holdings ranging from less than one hectare to fifty hectares, the majority being from two to five hectares. The smallness of the holding [428] is due partly to the laws of inheritance, by which the land is divided between the children on the death of the owner, and partly to the fact that the district is so hilly that only small areas are available for cultivation.

241 476 THE HAY meadows belong to the commune and are both worked and used collectively by the peasants, all necessary organization being in the hands of the mayor and committee.

471 [313] THE FORESTS are largely state-owned, although some portions belong to the commune, in which case the peasants are allowed to cut for their own personal use (house-building, implements, etc.), but not for profit.

[233] THE HIGH pastures belong to the commune; the peasants pay a small fee to the commune for their use (20 lei per head per season for sheep, rather more for cattle).

132 AN IMPORTANT climatic feature affecting agriculture is the shortness of the summer, late spring and early autumn frosts

PLATE 1

313

Kumpana. Forestry. Logs, etc., lying by stream-side ready to be dealt with. *Photo by H. J. Howard*

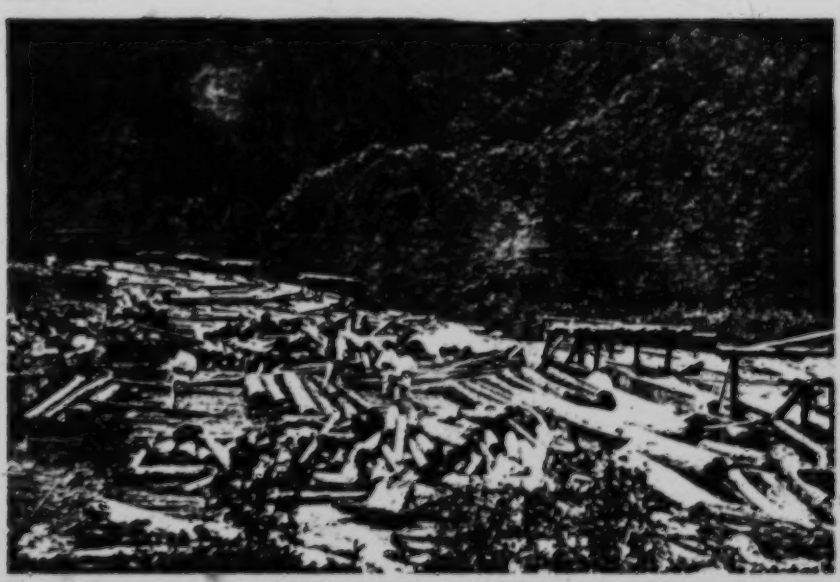
Forestry. Kumpana. A kind of barrage where logs are let through into shoots graded as regards size. They are then rolled down to side of railway and rolled up inclines on to the trucks. *Photo by H. J. Howard*

[page 40a]

5; Fleure S-5 (no date)1939 ED! Rumania EDI

PLATE X

●313



Kumpana. Forestry. As the logs pass down the "shoots" a man on the elevated platform sees that logs of even lengths are let out at side of "shoot" for loading on to the trucks seen on left-hand side. *Photo by H. J. Howard*

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342

The Argeș District. Visit to Forestry section (Kumpana). Inside of forestry hut, showing large open stove for cooking meals. Huge logs of wood were being burnt on a stone hearth. There were sleeping bunks for the lumber-jacks all round the sides of the hut. *Photo by H. J. Howard*

[page 406]

231 owner's farm, where the cows are kept in sheds, and the sheep, which are more hardy, are penned on the arable land, particularly on the maize stubble. Both sheep and cattle are fed on fodder crops during the winter. The surplus animals are sold at the autumn fair, and form a source of revenue.

876 [234] Whilst on the high pastures the sheep are clipped twice, and the wool is divided amongst the peasants in proportion to the number of animals sent up. The cheese is usually shared by the owners of the animals in the same way, the mayor and his committee being responsible for the correct apportionment. In the Valley of the Argeş co-operative dealers from Bucharest frequently buy the cheese "in bulk" direct from the commune, and the monetary value is shared between the owners of the animals.

291 Oxen are used almost exclusively for draught purposes, the numbers kept in this district being somewhat in excess of the farmers' requirements, owing to their use for lumbering (see below).

241 [369] [439] Peasant farming in the Valley of the Argeş is no longer entirely on a subsistence basis. Two factors have tended to modify it. Firstly, the position of the valley, opening as it does directly on the Wallachian Plain, with its rich grain lands and containing the capital Bucharest, has allowed commercial intercourse to develop. The Argeş peasant no longer cultivates wheat; he does not mind if his maize crop is good enough for fodder only, for he can buy both wheat and maize from the plain. Further, he finds a ready market and so a money income in Bucharest for his surplus fruit, ● 313 particularly apples, and cheese. Secondly, the forests form a valuable asset to the peasant. During the winter felling takes place in the upper basin of the Argeş; in spring and summer the timber is transported, and work in the State mill in Curtea goes on all the year round. Practically every household has somebody working in the timber trade, and the money so earned (as much as 100 lei per day for a man supplying his own yoke of oxen) reduces the dependence of the family on the farm.

874 242 At Curtea de Argeş is the School of Agriculture, Regina Elizabeta. Although only a small percentage of its pupils is local, it is gradually influencing the farming of the neighbourhood. Experiments in cultivation, plant breeding and

433 The alimentary industry includes the important sections of sugar-refining, milling, alcohol distillation, and brewing.

[288] The textile industries have shown the greatest expansion, owing to the excessive protection they have enjoyed. The woollen industry is capable now of producing excellent cloths, most of the yarn being supplied by the local spinning mills, which employ wools produced in the country.

The artificial silk and cotton mills obtain their yarn from abroad, practically duty free, and are able to supply about three-fourths of the local requirements. Only the better qualities of cottons are imported, while foreign silks are practically excluded by the prohibitive duty imposed on them.

The knitting industry has also secured a complete control of the market, and no foreign knitted articles are imported.

[313] The lumber industry was some time ago one of the most prosperous in the country. Until 1925 its output was about 3,200,000 cubic metres of timber, out of which some two million cubic metres were exported annually. Since 1930 the demand has fallen off very considerably, and huge stocks have accumulated, and as prices have dropped the sawmills are registering immense losses. Thus one well-known timber firm, the Foresta, had sustained a loss of 250 million lei during 1930, and it may be said that actually all the timber industry is in a very precarious condition, owing to its inability to cope with Russian competition.

[282] The leather industry obtains all its raw material locally, and its production of sole leather and uppers is sufficient for the home requirements. Even gloves, leather cases, etc., are manufactured locally, and only a very limited quantity of fine and superior leather is now being imported.

000 The following table shows a detailed list of imports during 1930:

12: Kormos S-4, 5 (no date) 1944
EDI Rumania EDI

[The Crisana]
[Maramures]

mostly Hungarians, and occupies a similarly important position. Here there are numerous factories, including mills, railway shops and locomotive works and textile factories. Satu-Mare (Szatmar[H]), with 60,000 inhabitants, is the largest town in the Northern Crisana.

After the Great War the Crisana, which was first occupied by the Hungarians in the tenth century and subsequently colonized by them, was awarded to Rumania. Under the Vienna Award of 1940 part of the Crisana was returned to Hungary, with a considerable Rumanian population.

By the same decision the province of Maramures (Marmaros[H]) (about 1,350 square miles), inhabited by over 150,000 people, acquired by Rumania in 1918, was returned to Hungary. Geographically Maramures is a continuation of the Czechoslovak province of Ruthenia. It is enclosed on all sides by chains of mountains covered with thick forests whose great density is rare even in the Carpathians, which are famous for their wealth of trees. It is not easily accessible except by a solitary railway line which comes from Transylvania and leads to Ruthenia. The small population consists of Ruthenians, Rumanians, Jews, Slovaks and Hungarians and is typical of the medley of races to be found in quite small areas of this part of Europe. Owing to the mountainous nature of the country there is little agriculture. The chief occupation of the inhabitants is the felling of trees. The most valuable asset of the province is its mineral wealth. There is oil, gold, copper, salt and coal. The capital and only major town of Maramures is Sighet (Marmaros-Sziget[H]) with a large Jewish population. Sighet, a town of

241 The basis of Rumanian economy is agriculture in that some 80 per cent. of the population derive their livelihood from the land and agriculture provides a high proportion of the national income. [315] During recent years, however, the expansion of the oil industry has meant that agricultural pro- [439] duce has played a decreasing part in the country's exports, having been superseded by oil, exports of which amounted to 48 per cent. of the total export trade in 1938, compared with 19 per cent. in 1927, while grain exports in 1938 represented 23 per cent. compared with 46 per cent. in 1927.

In spite of the importance of agriculture to national prosperity farming methods are backward and per acre crop yields are among the lowest in Europe. Attention is particularly given to growing cereals, and of these maize is the chief, [231] providing a large surplus for export (apart from the war years). Livestock density is low, which is one of the weaknesses of Rumanian agriculture, the Banat being the only district in which numbers [439] are fairly high, and farming approaches the intensive system. It must be stressed that the relatively large export surplus, which consists of wheat, maize, barley, oilseeds and pulses, livestock, oilcake, etc., is only made possible by [146] the very low nutritional level which prevails, and that if this were raised to anything like western European standards exports would be commensurately reduced.

248 Since the war more attention has been paid to 249 the growth of industrial crops such as sunflower, soya, cotton, hemp and flax, and the cultivation of rubber-bearing plants has been started following the finding of the *Kok Saghys* plant left by the Russians in Bessarabia. Though some success has been achieved in increasing the areas under textile fibres, and yields have been slightly higher, the hoped for increases in sova and sunflower cultivation have not been achieved due to unfavourable weather conditions and to general wartime dislocation.

●313 Rumania's forest resources, though extensive, have suffered severely from a consistent policy of over-exploitation, and, while providing the basis of a fairly important industry during the period between the two wars, have been so depleted that cutting will have to be very restricted for a number of years if they are to be allowed to recover. The loss of Northern Transylvania has affected the timber industry in particular, as a high proportion of the forest resources were located there, and in that district this industry was better developed than elsewhere in the country.

IMPORTANCE OF OIL

315 Oil plays a major part, not only in Rumania's foreign trade, but also in covering her domestic fuel requirements, to a large extent replacing coal, reserves of which are small and of low quality. Since the war and the resulting pressure which Germany has exerted to obtain increased quantities of oil for her armies, (combined with the consistent drop in the rate of production between 1936 and 1941), serious attempts have been made to find alternative sources of fuel. The enormous reserves of natural gas existing in Transylvania, which were exploited only very slightly before the war, are being used increasingly as a source of fuel to supply local industries, and a

728 of requirements for sulphuric-acid production. Of lesser importance were the salt and coal de- [135] posits.

The forest resources of Northern Transylvania are estimated to have accounted for as much as [313] 25 per cent. of pre-war timber production. Apart from timber the food and leather industries [311] appear to have been the most developed. This area was principally made up of forests and pastures; the arable land provided no surplus [433] after local needs had been covered. Of livestock losses the most outstanding feature was nearly 2 million sheep.

[496] The railway system, and particularly the railway administration, was severely handicapped by the change of frontiers, which in places cut one part of Rumania off from the other.

Caliacra and Durostor, the two ceded Dobrujan provinces, are mainly agricultural, and though producing a small surplus, contributed little to Rumania's total agricultural output. Of more significance is the cotton-growing area. There are no known mineral deposits, and industry in this area is on a very small scale, relying mainly on handicrafts.

TRANSNISTRIA

727 Transnistria is the name which has been given to the territory lying between the Dniester and the Bug, which was given to Rumania to administer in 1941 subsequent to its capture from the U.S.S.R. by Rumanian and German troops. Transnistria is part of the Southern Ukraine and is mainly agricultural, while such industry as existed has been of no use to the Rumanians on account of the heavy destruction carried out by the Russians. It is probably true to say that this territory has been more of a financial liability than an asset to Rumania on account of the heavy expenditure entailed in repairs, particularly of railways and bridges. Some little advantage has, however, been gained from the harvest of 1942-3.

B. TIMBER

313 *NOTE: All for other south-eastern European countries, the statistical and other data available on forest conditions is most insufficient. It has, therefore, been necessary to refer to the works of private foresters who differ considerably in their statements and conclusions. The statements which follow are, it is believed, substantially accurate, but must be considered with a certain degree of reserve.*

I. PRE-WAR SITUATION

The forests of Rumania were one of its most important natural resources and of much value to the country's general economic welfare. A large part of the fuel requirements were supplied in wood, in addition to which the country was self-sufficient in its needs for constructional timber, etc., whilst timber exports took third place after grain and oil. The timber industry was, however, over-expanded in relation to the size of the forests, the normal yield of which although able to cover domestic requirements, was not sufficient to meet the heavy extra demands for export. The result was that over many years up to the outbreak of the present war, the relatively high exports were only made possible by considerably overcutting the forests.

1. Area, Location and Species

137 According to the last known survey, Rumania's forest land covered about 7.1 million ha. (27,000 sq. miles), of which about 90 per cent., or 6.4 million ha., were stocked—equalling 22 per cent. of the total land surface. As was to be found in all Balkan countries, the forests were dominated by broadleaf species, the area under conifers being only 25 per cent.

The following table shows the division of the stocked forest area by regions and species, in '000 hectares :—

137 Banat and in west Transylvania; and of these 15 per cent. are not easily accessible and are unremunerative to exploit on account of heavy capital expenditure necessary to build suitable roads and railways. The forests of the plains were of minor importance, especially since they consisted almost entirely of young trees yielding firewood only.

Beech was the principal forest tree, except in the plains, where it gave way to various species of oak. The eastern Carpathians constituted the only predominantly coniferous regions.

[423] The following table shows how the forests were owned and managed; column 1 shows the area in million Hectares, column 2 the equivalent in square miles :—

	I	II	% of Total
State owned	1.9	7.3	30
Owned by communes, churches, etc.	2.0	7.7	30
Owned by companies and private persons.. ..	2.5	9.6	40

About 70 per cent. of the forests were treated as "high forests" (i.e., allowed to grow naturally) and the remainder were under varying forms of "coppice management" (i.e., allowed to grow from roots after cutting, thus producing small timber).

313 439 **2. Annual Increment and Domestic Consumption**

Chiefly as a result of Rumania's Agrarian Reform policy in 1924 and 1925 of clear-cutting huge forest areas to provide peasants with additional agricultural land, very large volumes of timber became available for the export market, with the result that a wrong impression was created abroad that Rumania was a country with a large export surplus of timber.

[31d]

16: Great Britain G-4 (no date) 1943
ED1 Rumania ED1

313 According to V. Saban, a leading Rumanian forester, the country's estimated domestic consumption and total forest growth in the early 1930's were :—

[31e]

16: Great Britain G-4 (no date) 1943 ED1 Rumania ED1

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	Consumption			
	Per capita	Total	Annual growth	Surplus
	solid cu. m.	'000 *solid cu. m.*	'000 *solid cu. m.*	'000 *solid cu. m.*
Firewood	0·50	9,250	12,500	3,340
Timber :—				
Conifers ..	0·17	3,122	3,230	108
Broadleaf ..	0·14	2,000	2,800	140
	0·81	15,032	18,020	3,588

[31f]

313 [439]

CHAPTER VI

From this it appears that there was a surplus for export of only about 248,000 cubic metres of timber, but about 3.3 million cubic metres of firewood.

The figures for firewood growth and consumption include branches and other unmerchantable parts of the tree (*Reisholz*). Growth of these was about 3.6 million cubic metres, and although it is not known what quantity of these were included in consumption, this is not thought to be large, as such wood is mostly left in the forests. It was considered, therefore, that the greater part of the firewood surplus consisted of branches, etc., not sufficiently merchantable to be regarded as available for export.

If *Reisholz* is excluded, net merchantable growth was about 15 million cubic metres consisting of about 9 million cubic metres firewood and 6 million cubic metres timber :—

	'000 *cubic metres*
Conifers ..	3,230
Broadleaf* ..	11,787
	15,017

* Of which (in '000 cubic metres) beech 5,641 ; oak 2,933 ; and sundry 3,212.

3. Annual Cut

As far as can be ascertained, average annual felling, in millions of solid cubic metres, over a number of years was as follows :—

	Annual cut	*Of which Conifers*
1920/21 ..	16.3	3.3
1922/26 ..	20.7	5.8
1927/30 ..	19.3	5.6
1931/37 ..	17.2	4.4

This is equivalent to an average annual cut over the period 1920/1937 of 18.4 million cubic metres, an excess of 3.4 million cubic metres over net growth, or an exploitation of 120 per cent. per annum. The result of this over-exploitation was that by 1936 a large area, estimated to be as much as 3 million ha., was considered unsuitable for further production.

The conifers particularly were overcut, to the extent of an average of 50 per cent. of their growth. This was principally due to the heavy export demand for these, but can be explained in part by the fact that much of the Rumanian beech yields poor quality timber suitable only for firewood. This is shown more clearly in the details of cut by species for 1930 (the only available figures of such cutting) reproduced in Table 1 on page 33. No details of cut by trade categories are known for any year, but after firewood the largest individual item was sawlogs.

4. Timber Industry

After 1920, with the help of foreign capital, the sawmill industry was considerably over-expanded compared with the normal yield of the forests, and by 1928 there were estimated to be 570 mills in operation, which consumed in that year more than 12 million cubic metres of logs. Subsequently, as a result of world economic conditions and increasing competition on the European markets from the U.S.S.R., sawmilling activity, and with it forest exploitation, declined to some extent; but the industry was nevertheless still over-developed up to the outbreak of war.

In 1938 there were 713 timber concerns employing 43,326 people, of which 478 were sawmills with 37,693 employees; the balance consisted mostly of joinery works, furniture factories, and

1/ [Cf. table, cat. 313, p. 31 f - Analyst]
2/ i. e., p. 33 a -- Analyst] [32 a]

313 cooperage and boxmaking plants. The distribution of these is shown in Table II although separation of the sawmills from the other industries is not possible. There were also three match factories, which covered internal requirements, and four wood-distillation plants, two of which, situated at Margina and Resita, appeared to be relatively large concerns.

5. Exports

313 439 Rumania's timber exports between 1935 and 1938 averaged 1·8 million cubic metres per annum, which was 5 per cent. of total European exports, and gave her the leading place among south-east European countries. Almost 90 per cent. of total exports were conifers, whilst, as the following table shows, sawn goods made up by far the greater part :—

Categories	*Average annual exports 1935-38 (in '000 cubic metres)*	%
Sawn goods	1,280	71
Firewood	222	12
Hewn goods	113	6
Sawlogs	71	4
Boxboard, etc	37	2
Pitwood	34	2
Pulpwood	26	1½
Sleepers	21	1½
Total	1,801	100

Exports were made to many countries, including South America, but the most important customers were Hungary, Germany, U.K., Syria, Palestine, Egypt and Greece. Trade with Germany in the immediate years prior to the war was tending to increase.

6. Employment

313 [+64] It was estimated by a qualified expert that the forests gave direct or indirect employment to 750,000 people (about 10 per cent. of the total labour force) in forest work, transport of forest produce and in the timber industry and trade. At least 250,000 were engaged in actual forestry work, but this number probably included part-time and seasonal workers.

7. Transport

[505] [497] Water transport played but a small part in the carriage of timber, carrying only about 700,000 cubic metres per annum. By far the greater reliance was placed on transport by railways, and some 10 million cubic metres were carried by this service each year.

II. PRESENT SITUATION

Under war conditions Rumania has been faced with increasing difficulties for her supply of timber, and as most of the quantities now made available are required for home consumption, she has very little significance as an exporter.

The forest area lost by the cession of part of Transylvania is estimated to be about 1·4 million ha., and as this area accounted for 25 per cent. of pre-war production its loss is of serious consequence. It is estimated that under existing circumstances the maximum annual cut that is possible, if the present forest area is to be maintained, is 12 million cubic metres.

About 210 timber-processing concerns, of which 178 were sawmills, were also lost with Northern Transylvania, but in view of the over-expansion of the timber industry these losses are probably of less serious consequence.

●313 Present fellings are not known, but a considerable shortage of forest workers and draught animals, coupled with poor transport conditions generally, are making it impossible to fell and to distribute sufficient timber to meet all home demands. These have been considerably increased by the need for timber for military purposes both in the country and at the front, and for reconstruction work in the war-damaged areas of Bessarabia, Bucovina and Transnistria. The result is a heavy and at times serious shortage of supplies.

[439] Exports, which had already fallen to about 562,000 cubic metres in 1940, further declined after the loss of Transylvania and were only some 210,000 cubic metres in 1941, but of these about 180,000 cubic metres were old accumulated stocks of sawn goods which were sold to Germany and the U.S.S.R. at the beginning of that year. No information has yet been received concerning 1942 exports, but the increasing difficulties of production make it unlikely that these were of any importance, and probably did not exceed 50,000 cubic metres.

[656] The forests are now placed under Government control and many decrees have been published regulating and defining the quantities and dimensions of trees that may be felled. Maximum prices have been fixed for all classes of timber, and a strict rationing of firewood introduced, whilst in 1942 an export embargo was placed on several categories of timber, principally soft woods.

After the cession of Northern Transylvania, German forestry experts visited the country to advise on proper forestry methods, and although there is no real evidence of what was decided, there are indications that the country is now more forestry-minded, and that more regard is being paid to reafforestation and other necessary work. These are, however, long-term policies and can have very little immediate effect or improvement on the country's present difficult situation.

TABLES

1. Details of Cut and Ownership, 1930

[423]

Timber	*State*	*Communes*	*Private*	*Total*
	(in '000 *solid cubic metres*)			
Conifers ..	570	2,450	2,850	5,870
Beech ..	1,080	300	480	1,860
Oak, etc. ..	350	390	520	1,260
Firewood ..	2,820	2,130	6,930	11,880
Total ..	4,820	5,270	10,780	20,870

2. Distribution of Timber Industry, 1938

	Units	*Personnel*
Total timber industry ..	713	43,326
of which :		
Sawmills	478	37,693
Distribution of total timber industry by administrative regions :—		
Olt	18	1,756
Bucegi	159	7,177
Marea	3	38
Dunarea de Jos ..	29	932
Nistru	3	109
Prut	67	6,222
Suceava	110	6,555
Mureș	155	9,196
Someș	83	7,163
Timiș	86	4,178

[33a]

C. PAPER AND PULP

289
313

With a normal consumption of only 3·3 kg. (7¼ lb.) of paper and board per head of the population, compared with 37 kg. (81·4 lb.) in Great Britain, Rumania is one of the smallest consumers in Europe. The country's requirements in ordinary grades of paper and board are well covered by about thirteen paper mills, some of which also manufacture both chemical and mechanical wood pulp.

Newsprint requirements are met by home production.

Pre-war (1936) production of chemical pulp was 37,000 tons and of mechanical wood pulp 9,000 tons, while the output of paper in the same year was 48,000 tons, and of cardboard 10,000 tons.

[439] Small imports of sulphate pulp normally came from Sweden, and of mechanical wood pulp from Austria.

In 1940 the production of paper rose to 105,150 tons, of which little more than half was sold internally and about 90 per cent. came from mills in the Rumanian Paper Cartel.

By the early part of 1942 a critical situation had arisen due to scarcity of fuel and raw materials.

The principal pulp and paper mills having four or five machines each and an annual capacity each of 24,30,000 tons of paper are as follows:—

(*a*) Fabrica de Celuloză Zărnești S.A., Brașov.
(*b*) "Letea" Fabrica de Hârtie Bacău.
(*c*) Fabrica de Hârtie "Bușteni" (C. & S. Schiel) at Bușteni.

The remaining mills, about ten in number, are much smaller, and three of them, with a combined capacity of 67,000 tons per annum, have come under Hungarian ownership following the Vienna Award.

Zărnești Cellulose Mill is of primary importance as the main source of chemical wood pulp for domestic consumption and export, and it is believed that this factory is now making special bleached cellulose for the manufacture of explosives. Elaborate machinery imported from Germany was installed with fair promptitude.

The utilisation of reeds from the Danube delta has not yet (July 1943) begun, although much publicity has been given to this project in the local and German press, but a concession has been granted to a German-Rumanian Society, "Delta A.G." The Zărnești and Bușteni Paper Mills are participating and investigations are under way. A similar concession asked for by the Snia Viscosa concern in Italy is said to have been refused.

[434] In 1942 consumption of paper in the first half of the year amounted to over 90 per cent. of production, but in the second half-year the Cabinet imposed fresh restrictions on consumption in order to remedy the increasing shortage.

[439] There is a considerable trade with the Italian Government in bituminised cardboard for walling and roofing military huts, and it is believed that a part of these are imported from Scandinavia and exported (after bituminising) to Italy and the U.S.S.R. for the Italian Expeditionary Forces. It is also likely that, since the bombing raids on Italy, extra demands have been made for repair purposes.

CHAPTER XI

463 438 industrial labour. One-third of all workers engaged in industry are independent artisans, on whom the community is dependent for its services but who do not play any important part in war production. In certain of the larger armament works German controllers have effected a considerable degree of rationalisation.

3. Mining

316 727 There is a shortage of miners; Russian prisoners of war have been employed in mining during 1942. Many miners were reported to have been included in the territory transferred to Hungary.

4. Armament Works

719 464 There is a general shortage of labour in metal and engineering factories, particularly of skilled labour. A 12-hour day was legalised at the beginning of 1942, but it is doubtful if in fact a 12-hour day is ever worked.

5. Timber

313 464 There is a shortage of labour, both for lumbering and for timber manufacture.

6. Textiles and Clothing

464 288 294 The total number of workers in these industries has probably fallen considerably, due to reduction of available raw materials. The delivery of supplies to individual mills seems to be somewhat erratic and there is evidence of considerable part-time work, for instance in a survey of some 43 factories in December, 1942, 11 were working full time, 21 on a reduced scale, and 11 at a very reduced scale.

7. Building

499 712 464 The extent of fortification building and general road and rail construction in Rumania is unknown, but in the second half of 1942 there was evidence of a scarcity of general labour for such projects, and of Russian prisoners of war working on rail construction.

438 464 [759] In the other branches of occupation, transport services, etc., there is no evidence of labour shortage, apart from doctors, many of whom have been mobilised for the army.

D. CONTROL OF LABOUR

1. The Youth Labour Service

466 883 A youth labour service founded on the German model was established in March 1941. The leaders were trained in Germany, but it was only in April 1942 that the labour camps began to function. Youths are called up in their 19th–20th year, and the period of service lasts 7 months.

(*See* Part II, Chapter V.B. for further details.)

2. Civil Mobilisation

466 A general civil mobilisation decree was passed in May 1941 by which (1) employment cards were introduced; (2) men and women aged 20-57 were liable to compulsory employment if not employed.

Two subsequent decrees were published in March and May 1943, one for the reorganisation of agriculture, forestry and fishing, and the second for the reorganisation of industry. Each of these decrees gave full powers to the appropriate authorities for the mobilisation and transfer of labour.

In addition to the general labour decrees which have so far had little influence on the labour situation there have been regional decrees applying to individual localities, e.g. in Bessarabia, in February 1942 all the inhabitants aged 22-57 were called upon for compulsory agricultural labour unless already employed.